

## CLAIMS

What is claimed is:

1. A method for transmitting data across a network having an ethernet network segment using point-to-point protocol (PPP), comprising the steps of:  
  
identifying each packet having a TCP packet encapsulated within a PPPoE packet that is to be transmitted across said network;  
  
analyzing each said identified TCP packet to determine whether the SYN flag within the header of said TCP packet is set;  
  
if said SYN flag is set, comparing the MSS value contained in said TCP header with a predetermined decimal number that is no larger than the decimal number 1452,  
  
if said MSS value is larger than said predetermined decimal number, substituting the predetermined decimal number into said MSS value;  
  
transmitting said packet to said network for routing to a destination.
2. A method for transmitting data across an ethernet network segment using point-to-point protocol as claimed in claim 1, wherein said predetermined decimal number is 1452.

3. A method for transmitting data from a first device to a second device across a network having an ethernet network segment using point-to-point protocol, comprising the steps of:

identifying packets transmitted from said first device having a TCP packet encapsulated within an ethernet header;

for each identified TCP packet, determining whether the header of said TCP packet contains an MSS field;

determining whether the value in said MSS field is larger than the decimal number 1452;

if said value in said MSS field is larger than the decimal number 1452, substituting a predetermined number no greater than the decimal number 1452 into said MSS field,

placing said packet on said network for delivery to said second device.

4. A method for transmitting data from a first device to a second device across a network having an ethernet network segment using point-to-point protocol as claimed in claim 3, wherein said predetermined number is the decimal number 1452.

5. A method for transmitting data from a first device to a second device across a network having an ethernet network segment using point-to-point protocol, comprising the steps of:

identifying packets transmitted from said first device having a TCP packet encapsulated within an ethernet header;

for each identified TCP packet, determining whether the header of said TCP packet contains an MSS field;

for each identified TCP packet containing an MSS field, substituting a predetermined number no greater than the decimal number 1452 into said MSS field,

placing said packet on said network for delivery to said second device.

6. A method for transmitting data from a first device to a second device across a network having an ethernet network segment using point-to-point protocol as claimed in claim 5, wherein said predetermined number is the decimal number 1452.

7. A machine readable storage having stored thereon a computer program for transmitting information over an ethernet network using point-to-point protocol (PPP), said computer program comprising a routine set of instruction for causing the machine to perform the steps of:

accepting a packet for transmission across said ethernet network;

determining whether said packet contains an encapsulated TCP packet having a header option for an MSS field;

comparing the value in said MSS field with the decimal number 1452;

for packets having an MSS value greater than the decimal number 1452, substituting a predetermined number no greater than the decimal number 1452 into said MSS field,

placing said packet on said network for delivery to said second device.

8. A machine readable storage having stored thereon a computer program for transmitting information over an ethernet network using the point-to-point protocol, said computer comprising:

a TCP packet buffer

a comparator configured to determine whether a header of a TCP formatted packet in said TCP packet buffer contains an MSS field;

an MSS setter configured to set said MSS field to a value in a range from zero to 1452;

an encapsulator configured to encapsulate said TCP-formatted packet within a payload of an IP packet, to encapsulate said IP packet within a payload of a PPP packet, to encapsulate said PPP packet within a payload of a PPPoE packet, , and to encapsulate said PPPoE packet within a payload of an ethernet packet; and

an ethernet packet transmitter.

9. A machine readable storage as claimed in claim 8 wherein said MSS setter is configured to set said MSS field to a value of 1452.